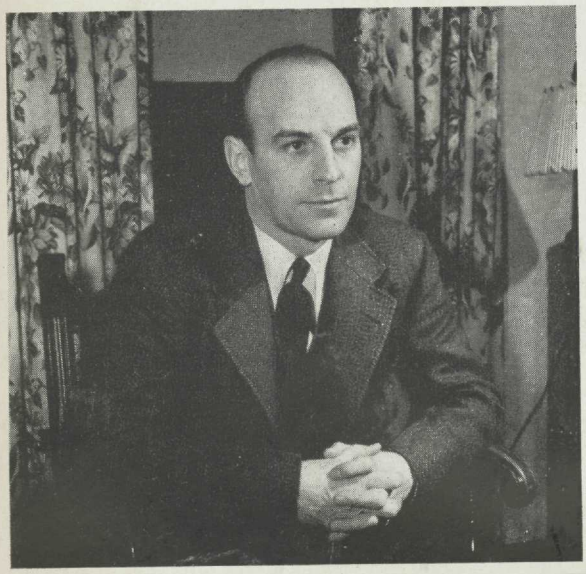
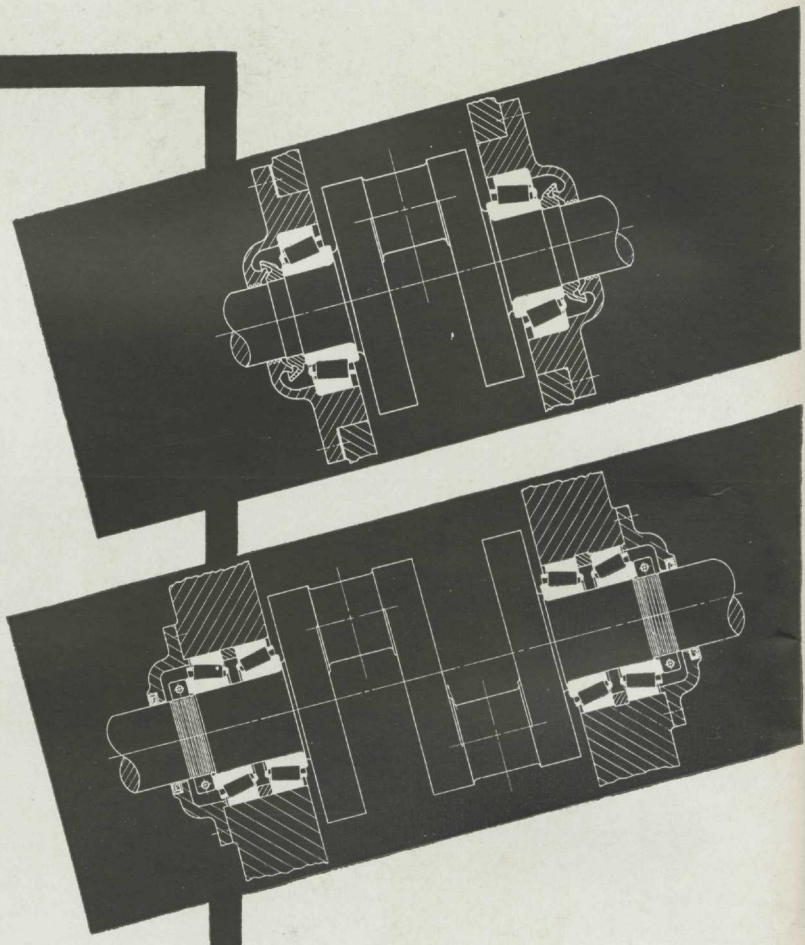


THE OHIO STATE ENGINEER

NOV. 1941

Member of Engineering College Magazines Association

WHAT BEARINGS WOULD YOU SPECIFY FOR THE CRANK SHAFT OF AN OIL FIELD ENGINE?



If you were called upon to design a gas, Diesel or steam engine for oil field work how would you support the crank shaft? If you knew your bearings you wouldn't have to think twice. You would do as most of the leading engine builders do; you would mount the crank shaft on TIMKEN Tapered Roller Bearings—single or double, according to the length of the shaft and the H.P. of the engine.

This would assure a smoothly-operating engine that would transmit its maximum power rating to the job, for main bearing friction would be eliminated. Full protection against both radial and thrust loads would be assured. Wear on the ends of the crank shaft would be prevented because all movement takes place within the TIMKEN Bearing itself. Main bearings would seldom, if ever, have to be replaced on account of wear. Crank shaft alignment would be maintained indefinitely.

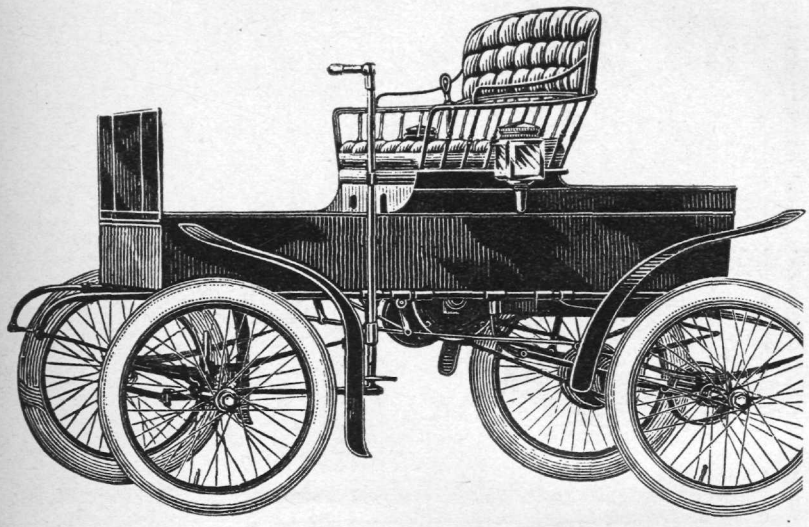
You can learn a lot more about crank shaft bearings and many other applications by studying the Timken Reference Manual. We will gladly send you a copy. Write for it. Know your bearings—be a better engineer.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

TIMKEN
TAPERED ROLLER BEARINGS

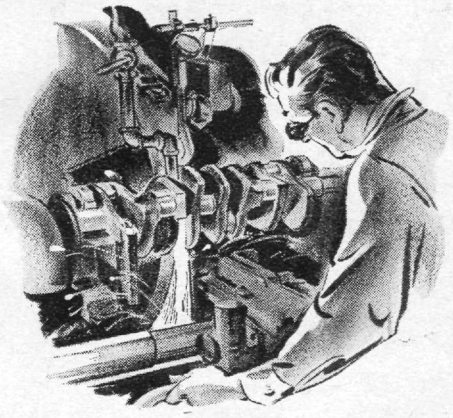
Manufacturers of TIMKEN Tapered Roller Bearings for automobiles, motor trucks, railroad cars and locomotives and all kinds of industrial machinery; TIMKEN Alloy Steels and Carbon and Alloy Seamless Tubing; and TIMKEN Rock Bits.

"No smell, noise, jolt, etc..."



"Positively the most perfect machine on the market" was the manufacturer's description of this horseless carriage in 1900. And only the rich could afford such perfection. Parts were finished by hand. Interchangeability of parts was unheard of. Then came man-made abrasives such as "Carborundum", and later "Aloxite", to help bring about the mass production that has made available to everybody that miracle of transportation—the modern American car.

The use of man-made abrasives made it possible to finish parts to uniformly close limits of accuracy. Interchangeable crankshafts, cams, cylinders, pistons, gears could be produced in quantity for instant assembly. Better-built cars became available at new low prices. And the same mass production methods extended to other products have helped bring us a new standard of living.



A leader in the advancement of grinding, Carborundum now supplies abrasive products for obtaining finishes of unbelievable accuracy. No matter what type of industry you may be identified with after graduation, you will find it profitable to use Carborundum engineering experience. The Carborundum Company, Niagara Falls, N. Y.

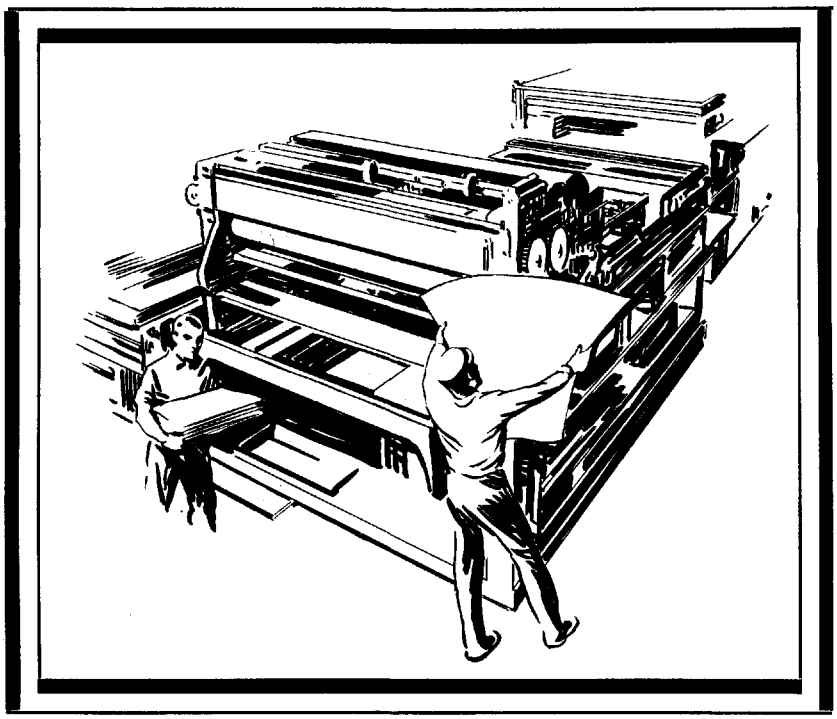
CARBORUNDUM
REG. U.S. BRAND PAT. OFF.
ABRASIVE PRODUCTS
50 YEARS OF SERVICE TO ALL INDUSTRY

Carborundum and Aloxite are registered trade-marks of and indicate manufacture by The Carborundum Company.

After All..

CAREFUL PLANNING

then that



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The CARROLL PRESS *Inc.*

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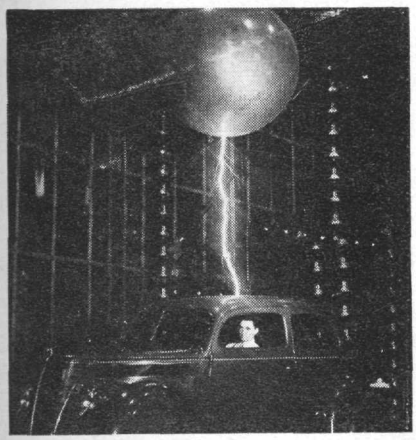
What do you know about electricity?

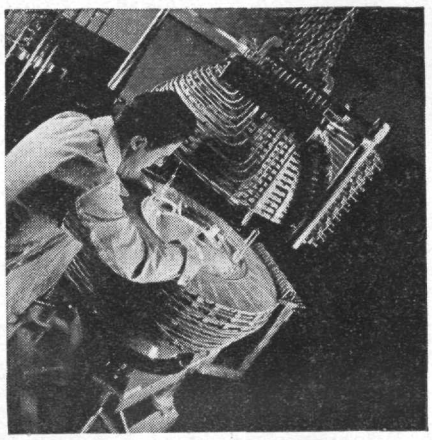
Check the correct answers to the questions below and see how many of these Westinghouse engineering activities you know



LIGHTNING EXPERIMENT

Recently, a Westinghouse engineer sat in his car while a 3,000,000-volt bolt of artificial lightning struck it. He was safe because the car body acts as:

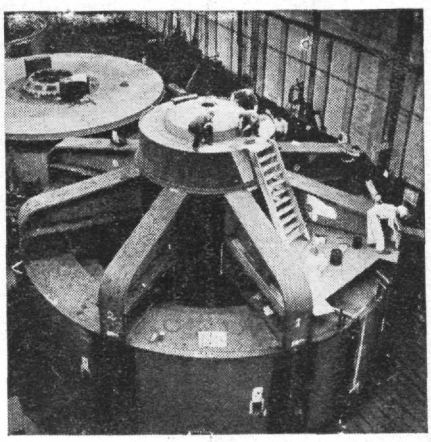
1. *A Helmholtz bell*
2. *A Faraday cage*
3. *A Maxwell's demon*
4. *A Wilson cloud chamber*



MASS SPECTROGRAPH

This mass spectrograph, used by engineers at the Westinghouse Research Laboratories, performs one of these functions:

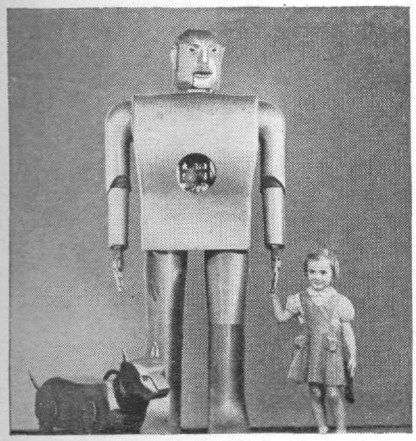
1. *Sorts atoms according to mass*
2. *Reveals spectra of stars*
3. *Produces U235*
4. *Measures amount of oxygen in air*



BIGGEST GENERATORS

Pictured above during construction is one of the three largest water-wheel generators in the world. All three are Westinghouse-built. Each will produce 108,000 kva, and is made for:

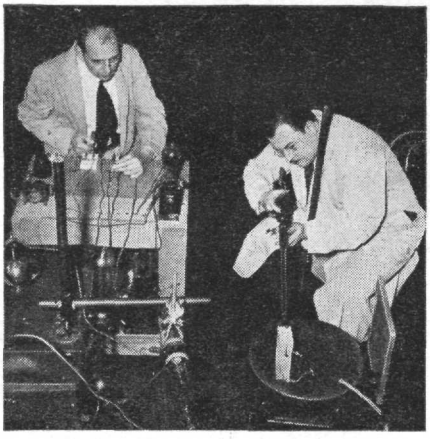
1. *Boulder Dam*
2. *Passamaquoddy*
3. *Dnieperstroy*
4. *Grand Coulee*



MECHANICAL MAN

This is the latest of a series of mechanical men made by Westinghouse engineers. He walks, talks, smokes cigarettes, raises his arms, counts on his fingers, distinguishes red and green lights. His name is:

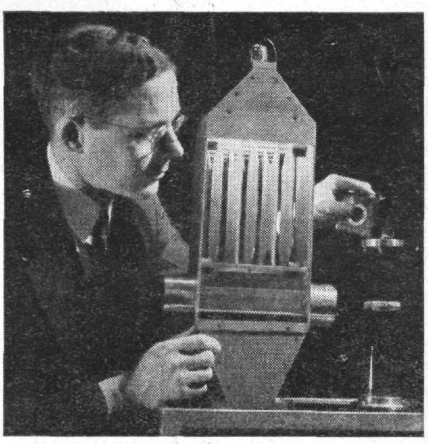
1. *Volto*
2. *Mephisto*
3. *Elektro*
4. *Sambo*



FAST X-RAY

Westinghouse research engineers have developed a motion-stopping X-Ray that operates in:

1. *200th of a second*
2. *40th of a second*
3. *100,000th of a second*
4. *1,000,000th of a second*



PRECIPITRON

The Westinghouse Precipitron removes 95% of the solid matter from the air, including particles as small as pollen, microscopic dust, and smoke. It works by:

1. *Law of inverse squares*
2. *Capillary action*
3. *Infiltration*
4. *Electrostatic attraction*

HOW DID YOU DO?

Here are the answers. If you got 4 out of 6 of these Westinghouse activities right, you did O.K. If you got 5 out of 6 right, you deserve a cum laude. If you got all of them right, you're amazing.

Westinghouse

"THE NAME THAT MEANS EVERYTHING IN ELECTRICITY"